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REMARKS

Claims 1-20 remain pending in this application. Of these claims, all remain rejected under 35 U.S.C. 103(a). The Applicants have carefully considered the Office Action of February 22, 2007, but respectfully traverse the new grounds rejections set forth therein. Reconsideration and withdrawal of these rejections in view of the following remarks are respectfully requested.

Obviousness Rejections

In the aforesaid Office Action, the claims remain rejected under 35 U.S.C. §103(a) as allegedly being obvious and unpatentable over the disclosure of Katsuragi et al (EP1125994) in view of Yue et al. (US 6461418), or in view of this combination of references further in view of one or more of Ota et al (US 20020075369), Suzuki et al. (US 6153001), and Katsuragi et al. (EP 1191077). It is respectfully submitted the evidence presented in the Example section of the original specification, is sufficient to overcome any alleged *prima facie* case of obviousness set forth by the cited references.

The Examiner has contended that the primary reference, Katsuragi et al. ('994), teaches an inkjet set similar to the one claimed with a fixing liquid composition comprising a polyvalent metal salt, which may include (among many choices) a copper salt [0049], and a color ink composition comprising coloring material, which may include (among many choices) a self-dispersed pigment colorant [0057]. The Examiner has also contended that, although Katsuragi et al. ('994) do not teach use of a water soluble polymer binder in the ink set described therein, there would have been motivation for one of skill in the art to pick and choose a water soluble binder polymer from Yue et al. for use with the ink set described in Katsuragi et al.

Although Applicants respectfully disagree with the Examiner's contention as to the motivation provided by the prior art to combine the references, Applicants note that, even assuming for the sake of argument that the Examiner's contention were correct, there is nothing in the references, either singly or collectively, that would show or suggest that the use of a specific type of SDP pigment ink paired with a specific type of copper fixing fluid as claimed would have advantageous effects as compared with use of any of the other possible ink/fixer combinations encompassed by the cited references.

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For example, Applicants wish to point out that the primary reference, Katsuragi et al. ('994), does not distinguish between a copper-containing fixer and a calcium containing fixer or an ink containing SDP colorant and an ink containing polymer dispersed pigment colorant, and in fact indicates that one is just as suitable as the other. Furthermore, none of the other references cited by the Examiner, including Yue et al. and others, make up for this deficiency in the primary reference.

By contrast, the experimentation done by Applicants, as described in the Example section of the subject application, shows that the claimed ink set provides advantageous results as compared with the ink/fixer combination which the primary reference alleges to be equivalent.

More specifically, Applicants have provided a comparison between an ink set comprising the claimed SDP colored ink with soluble polymer binder paired with a copper-containing fixer with an ink set comprising an identical ink composition paired with the other fixer salts exemplified in the primary reference, and thus compares the claimed ink set with the "closest" prior art, and the claimed combination shows unexpectedly superior results.

The closest prior art appears to be the ink sets disclosed in Examples 1, 19 and 10 in table 1 (page 34) of Katsuragi et al ('994). Examples 1 and 19 in particular disclose an inkjet ink set with self-dispersing pigment and a "liquid composition" containing calcium salt. Example 10 discloses an inkjet ink set with self-dispersing pigment and a "liquid composition" containing magnesium salt. Since nowhere in Katsuragi et al. is disclosed or suggested an ink with self-dispersing pigment that also contains soluble polymer binder or an effective amount of multivalent cation, which fact has been acknowledged by the examiner, the examiner relies on Yue et al. to supply this missing element.

By way of comparison, Applicants' specification contains numerous examples of ink sets with copper-containing fixers compared to ink sets with fixers containing other polyvalent metals, namely calcium, zinc, aluminum. The comparison of copper to calcium is highlighted the remainder to the discussion because of the direct relevance to examples 1 and 19 of Katsuragi et al ('994).

In Example 1 of Applicants' specification (Described on page 17, line 28 to page 19, line 7 of the specification), Ink B (self-dispersing pigment with soluble polymer

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binder) paired with copper-containing fixer D1, gives surprisingly better (higher) optical density (OD) than the same ink paired with other fixers including calcium-containing fixers A1 and B1. In contrast, copper fixer D1 paired with Ink A (similar to Ink B but containing no soluble polymer binder) does not stand out compared to calcium and other fixers, although it is arguably on the upper end of those tested.

In Example 3 of the specification (Described on page 19, line 14 to page 20, line 5), Ink B paired with the copper-containing fixer D1 achieved surprisingly better optical density (OD) at a lower area fill of the fixing fluid than the same ink paired with other fixers including calcium-containing fixer F1. In contrast, again, copper fixer D1 does not stand out, compared to calcium-containing fixer F1 and the other fixers, as a fixer for self-dispersing pigment inks that do not comprise soluble polymer binder (Ink A). The ability to use lower area fill of fixing fluid is advantageous because it imposes less liquid load on the substrate. At fixer fills greater than 75%, paper curl was severe.

In Example 6 of the specification (Described on page 23, line 1 to page 24, line 11), inks L2-L4 (with self dispersing pigment with multivalent metal salt) paired with the copper fixer D1 gave better optical density than similar ink (Ink L1, no salt) paired with D1. Especially advantageous is the pairing of Ink L2 (with added calcium salt) and copper fixer D1. Also advantageous was an ink comprising self-dispersing pigment and both soluble binder and calcium salt (Ink M) paired with copper Fixer D1.

To summarize Applicants' data discussed above, the table of Applicants' Example 1 shows that although the addition of a polymer binder in an ink comprising a self-dispersing pigment always reduces OD (compared to the ink without binder), the combination of binder/copper salt fixer fluid used has a positive effect on the OD (compared with other salts). A similar positive effect on OD is shown in Example 6, using the combination of multivalent salt/copper salt fixer solution.

It is clear that the above results could not have been expected from the prior art and were entirely unpredictable. It is respectfully submitted that this evidence of unexpectedly advantageous results is sufficient to overcome any *prima facie* case of alleged obviousness set forth in the cited art and the rejections should be withdrawn.

Applicants would also like to note (for the sake of argument and contrary to the Examiner's position) that one of skill in the art would not have even had a motivation to pick the claimed combination from the myriad of possible combinations encompassed by

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the cited references even assuming the references were properly combinable. Accordingly, it is respectfully submitted that the references do not set forth even a *prima facie* case for alleged obviousness.

The primary reference used in all the rejections, Katsuragi et al. ('994), teaches inkjet ink sets with a liquid composition comprising a polyvalent metal salt and a color ink comprising coloring material [0043]. Named as examples of polyvalents salts are magnesium, calcium, barium, iron, copper, and zinc [0049]. Magnesium and calcium are most preferred and are the only ones exemplified. Copper as a polyvalent in a liquid composition is nowhere exemplified. The coloring material includes dyes and pigments [0051], and the pigment can be polymer stabilized [0054] or self-dispersing [0057]. All these types of colorants are exemplified. As noted by the examiner, Katsuragi et al. ('994) do not disclose the limitation of a soluble polymer and/or an effective multivalent cation in a color ink comprising self-dispersing pigment.

To fill this gap, the Examiner relies on Yue et al. In applying Yue et al. the Examiner refers to claim 5 thereof. That claim discloses water soluble or water dispersible polymeric binder, and refers back to a base claim wherein the ink colorant consists essentially of dye. In fact there appears to be no specific disclosure of an ink with self-dispersing pigment and soluble polymeric binder. There are examples of ink with self-dispersing pigment and "acrylate binder", but no indication is given as to whether the binder is soluble or dispersible. In addition, Yue et al. nowhere disclose or suggest inkjet ink sets with a fixer (or "liquid composition") as it is called in Katsuragi et al. ('994). Thus, absent hindsight, there is absolutely no motivation to even modify Katsuragi et al. ('994) with Yue et al. as suggested by the Examiner.

Furthermore, there is nothing in any of the tertiary references to make up for the deficiencies noted in the primary reference and secondary references, to arrive at the invention as presently claimed.

Accordingly, should the examiner not accept the objective evidence of unobviousness as sufficient evidence, it is respectfully submitted that the references set forth do not set forth even a *prima facie* case for alleged obviousness, and the rejection should be withdrawn for this reason as well.

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Conclusion

In view of the above arguments, Applicants submit that claims 1-20 are patentable over the art of record, and that this case is otherwise in condition for allowance. If for some reason the application is not allowable, Applicants' attorney requests a telephonic interview with the Examiner to discuss the case and any additional amendments to the claims that may be required to place the case in allowable form.

Respectfully submitted,



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